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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,184	06/15/2001	Mika Nakamura	OGOH: 082	6958

7590

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EXAMINER

CHANG, KENT WU

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,184

Applicant(s)

NAKAMURA ET AL.

Examiner

Kent Chang

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 and 58-64 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-42 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 43, 44, 58-64 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention I in the reply filed on 6/15/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 43, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al (US Patent No. 6,069,620).

Consider claims 1 and 2. Nakamura teaches an LCD device and the method of driving the LCD having a first substrate on which TFT and pixel electrodes are formed and second substrate on which opposing electrode is formed, and means for applying driving signal to cause transition of a splay configuration of the LC layer to a bend configuration, comprising:

applying a potential difference, different from a potential difference in a normal image display period between the pixel electrode and the common electrode to thereby effect transformation to bend orientation in short time (column 3 lines 19-39, column 4 lines 34-46).

Consider claims 43 and 44. Nakamura teaches providing a period during which a larger potential difference than a potential difference in a normal image display period is applied between the pixel electrode and the opposing electrode, while scanning the gate lines by using pulsed signals (column 3 lines 19-39, column 4 lines 34-46, column 5 lines 20-50).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 58-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (US Patent No. 6,069,620) in view of Nakamura et al (US Patent No. 6,005,646).

Consider claims 58-61. In US Patent No. 6,069,620, Nakamura teaches an LCD device and the method of driving the LCD having a first substrate on which TFT and pixel electrodes are formed and second substrate on which opposing electrode is

formed, and means for applying driving signal to cause transition of a splay configuration of the LC layer to a bend configuration, comprising:

applying a potential difference, different from a potential difference in a normal image display period between the pixel electrode and the common electrode to thereby effect transformation to bend orientation in short time (column 3 lines 19-39, column 4 lines 34-46). Pat. 6,069,620 also shows varying the potential difference of the display electrode, the common electrode, and the gate electrode to form the potential difference. Pat. 6,069,620 does not show a storage capacities connected to the pixel electrodes are formed between the pixel electrodes and common electrodes having potentials common to all the pixel electrodes, so that, by means of a ratio between pixel electrode capacities including the storage capacities and capacities between parasitic gate lines of the TFT and pixel electrodes.

However, US Patent No. 6,005,646 shows an LCD device having a storage capacities connected to the pixel electrodes are formed between the pixel electrodes and common electrodes having potentials common to all the pixel electrodes, so that, by means of a ratio between pixel electrode capacities including the storage capacities and capacities between parasitic gate lines of the TFT and pixel electrodes (column 4 lines 1-16 and Fig.7). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to use an LCD device having a storage capacities connected to the pixel electrodes are formed between the pixel electrodes and common electrodes having potentials common to all the pixel electrodes, so that, by means of a ratio between pixel electrode capacities including the storage capacities and capacities

between parasitic gate lines of the TFT and pixel electrodes so as to having high switching speed.

Consider claims 62-64. It would have been obvious for one of ordinary skill in the art at the time of the invention to use a same common voltage level as the gate voltage level so as to decrease the number of voltage generators required for driving the LCD.

Allowable Subject Matter

6. Claims 3-42 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach an LCD device and the method of driving the LCD having a first substrate on which TFT and pixel electrodes are formed and second substrate on which opposing electrode is formed, and means for applying driving signal to cause transition of a splay configuration of the LC layer to a bend configuration, comprising:

applying a primary potential difference between the pixel electrode and the common electrode;

applying a secondary potential difference smaller than the primary potential difference between the pixel electrode and the common electrode; and

alternately applying the primary potential difference and secondary potential difference during a repeatable cycle period, the length of the primary potential difference application period being from at least 50% to no more than 95% of the length of one repeatable cycle period.

Furthermore, the prior art of record fails to teach an LCD device and the method of driving the LCD having a first substrate on which TFT and pixel electrodes are formed and second substrate on which opposing electrode is formed, and means for applying driving signal to cause transition of a splay configuration of the LC layer to a bend configuration, comprising:

applying a primary potential difference between the pixel electrode and the common electrode;

applying a secondary potential difference smaller than the primary potential difference between the pixel electrode and the common electrode; and

repeat control means for alternately executing applying the primary potential difference and secondary potential difference at least one time each; and

applying to source lines a potential in which a pixel electrode variation is reflected in an opposing electrode potential, the pixel electrode potential variation being induced by potential variation of the gate lines when the pixel transistor is switched to OFF from ON in applying a secondary potential difference, to charge the pixel electrodes.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Chang whose telephone number is 703-305-4824. The examiner can normally be reached on Monday to Thursday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at 703-305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

703-872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kent Chang
Primary Examiner
Art Unit 2673

kc

1/7/05